LCQ18: Application of generative artificial intelligence in primary and secondary schools

Following is a question by the Hon Mrs Regina Ip and a written reply by the Secretary for Education, Dr Choi Yuk-lin, in the Legislative Council today (May 24):

Question:

It is learnt that with the rapid development of generative artificial intelligence (AI), quite a number of tertiary institutions have formulated guidelines on the use of generative AI by their students. However, the Government currently does not have any guidelines governing the application of generative AI in primary and secondary schools. In this connection, will the Government inform this Council:

(1) as it is learnt that quite a number of primary and secondary school teachers have started to use generative AI to assist them in preparing for lessons and designing test papers, whether the Government will provide more training for primary and secondary school teachers on the use of generative AI and promote the use of generative AI in primary and secondary schools to assist in the development of teaching contents; if so, of the details; if not, the reasons for that;

(2) whether the Government will (i) draw up a code of practice on the use of generative AI by primary and secondary school teachers to assist their teaching work, so as to ensure that teachers will not violate professional conduct, and (ii) formulate guidelines for primary and secondary school students on the use of generative AI in learning, so as to ensure that students will not violate academic ethics; if so, of the details and implementation timetable; if not, the reasons for that; and

(3) of the measures currently put in place by the Government to monitor the use of AI in learning by primary and secondary school students, so as to ensure their academic integrity?

Reply:

President,

Technological development is ever-evolving. Generative artificial intelligence (AI) technology has brought about various opportunities and challenges worldwide. On one hand, generative AI technology has various contexts for application and could enhance work efficiency. At the same time, the related technology also gives rise to issues related to laws and regulations, ethics, authenticity of information, privacy protection,

intellectual property rights, addiction, excessive dependence, etc which have attracted much attention. As the development of generative AI technology is still evolving, we will continue to increase our awareness of related technologies and closely monitor its development and application in order to make appropriate responses. To protect mentally and psychologically immature children from potential negative influences, the education sector need to approach the related matter cautiously.

Our reply to the Hon Mrs Regina Ip's question is as follows:

(1) All along, the public sector primary and secondary schools in Hong Kong are required to plan and implement their curricula in accordance with the curriculum guides published by the Curriculum Development Council to help students construct knowledge, develop generic skills, as well as nurture proper values and attitudes and "learning to learn" capabilities through diversified learning experiences, with a view to achieving the educational aims of whole-person development and lifelong learning. When adopting AI for teaching purpose in schools, including the development of learning and teaching materials as well as assessment for learning, teachers must exercise their professional judgment to ensure that the approaches adopted and the materials prepared align with the curriculum aims and objectives by making reference to the curriculum guides and cater for the abilities and learning needs of their students. They should also make sure that there will be no negative impacts on the development of students' thinking skills, construction of knowledge base, and the nurturing of learning interests, attitudes and habits. In this regard, the Education Bureau (EDB) has been providing teachers with training relating to AI, including the application of AI in enhancing learning and teaching effectiveness. We have been working with post-secondary institutions and innovation and technology (I&T) institutions to co-organise professional training on I&T for teachers, including seminars and exhibitions on AI and Internet of Things, with a view to helping teachers make good use of I&T and teach students properly.

(2) The EDB has formulated the Guidelines on Teachers' Professional Conduct to clearly stipulate the professional conduct and norms of behaviour required of teachers, including nurturing in students positive values and attitudes, equipping them with the knowledge and skills required, and helping them develop critical thinking skills and lifelong learning capabilities. Teachers must be law-abiding, observe rules and regulations, respect intellectual property rights, discharge duties earnestly, and provide students with positive and effective guidance. Teachers should also keep pace with the times and continuously enhance teaching pedagogies. Therefore, teachers must uphold professional conduct and use AI applications prudently to assist their teaching.

While guiding students to make good use of I&T and information technology (IT) tools (including the use of AI), it is important for teachers to also foster students to become ethical users of technology. Improper use of AI at the primary and secondary levels will affect students' progressive construction of knowledge base and innovative thinking, and may even lead to undesirable consequences such as plagiarism or leaving assignments entirely

to AI. Whether AI could be used should also depend on factors including students' age, the learning expectations and outcomes at the respective learning stages, and the nature and topics of the assignments (such as whether they are meant for self-learning or assessment). We need to approach the related matters in a cautious manner.

The EDB has announced in 2022 the updated learning framework of Information Literacy for Hong Kong Students, which included ethical issues arising from the application of I&T, so as to enhance students' media and information literacy; provide guidance for them to learn how to select and interpret different types of information critically and the proper use of information to solve problems; as well as enable students to know how to differentiate the authenticity of information and use information and IT in an ethical and effective way.

In addition, the EDB is developing the Module on Artificial Intelligence for Junior Secondary Level and the Enriched Module on Coding Education for Upper Primary Level, with a view to enabling students to better understand and grasp the latest development in technology and I&T and their applications, and learn about how technology can improve our everyday life and enhance the development of our society. The module on AI for the junior secondary level mentioned above covers knowledge and concepts such as the foundation and ethics of AI, computer vision, computer speech and the impact of AI on society. The module on coding education for the upper primary level, covering the concepts of coding and computational thinking, aims at cultivating students' computational thinking through the learning of coding. The above curriculum modules are expected to be launched later this year for use by schools. The EDB also provides relevant professional development programmes for teachers to enhance their teaching effectiveness.

(3) The EDB has formulated guidelines on curriculum and assessment for schools and they should adopt suitable modes of assessment to track students' learning performance and progress. Schools should establish corresponding enforcement and supervision mechanisms to prevent improper use of AI programmes by students for completing their assignments/assessment works. As professional education workers, teachers can compare students' in-class performance and formative assessment results with their performance in assignments to determine whether the students have used tools (including AI programmes) to commit plagiarism. At the same time, schools should enhance information literacy education so as to nurture students' skills and attitudes to use information and IT effectively and ethically.

The impact of the development of I&T (e.g. generative AI) on students' learning is subject to further study by the education sector. The EDB will continue to closely monitor the latest development and update the contents of related curricula and guidelines in a timely manner. Besides, we will also organise seminars and workshops to provide assistance for teachers in teaching the knowledge and proper use of I&T to their students.